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Applicant(s):	Robert JANSEN, et al.	)	
		)	
Serial No.	09/913,996	)	Attorney Docket No.: GH-005
		)	
Filed:	August 22, 2001	)	Group Art: Not Yet Assigned
		)	
For:	ISOLATING A CYTOPLASMIC	)	
	FRACTION WITHOUT IMPAIRING THE	)	
	VIABILITY OF OOCYTES AND	)	
	EMBRYONIC CELLS	)	
		)	
Examiner:	Not Yet Assigned	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
Washington, D. C. 20231

Sir:

Pursuant to 37 C.F.R. §1.56, §1.97 and §1.98, documents that may be material to the examination of this application are listed on the attached PTO-1449 form. Copies of each document are enclosed.

The cited documents disclose numerous specific features. There has been no attempt to enumerate each and every feature disclosed by each document, however. The Examiner is requested to review these documents and to determine the extent of the materiality of the document disclosures, if any, with respect to the present invention.

The discussion of any art and the citation of any document herein is not to be construed as an admission that the art or document disclosure is necessarily within the invention field of endeavor, that the art or document disclosure is necessarily prior in time to a particular date which may be relevant to the instant patent application, and/or that the art or document disclosure is otherwise necessarily prior art as defined by the patent law with respect to the instant invention and application.

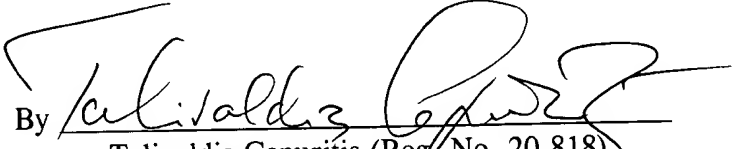
Serial No.: 09/913,996  
Filed: August 22, 2001

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Also, there is reserved the right to later set forth how the claimed invention is distinguished over the disclosure of any document or other art, including the disclosures of the art and documents recited herein, and that may be cited by the Examiner in rejecting a claim in the instant patent application.

The recitation herein of the art and documents is not to be construed as an assertion that more pertinent art could not possibly be in existence.

Respectfully submitted,

By   
Talivaldis Cepuritis (Reg. No. 20,818)

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**Complete if Known**

Application Number	09/913,996
Filing Date	August 22, 2001
First Named Inventor	Robert JANSEN, et al
Art Unit	
Examiner Name	
Attorney Docket Number	GH-005

## U. S. PATENT DOCUMENTS

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**FOREIGN PATENT DOCUMENTS**

[illegible]

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Signature

Date  
Considered

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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STATEMENT BY APPLICANT**

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Application Number	09/913,996
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First Named Inventor	Robert JANSEN, et al
Art Unit	
Examiner Name	
Attorney Docket Number	GH-005

Sheet 2 of 5

**OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		MEHTA, A.B., et al., "A New Genetic Polymorphism in the 16S Ribosomal RNA Gene of Human Mitochondrial DNA," AM. HUM. GENET., Vol. 53, pp. 303-310 (1989).	
		TROUNSON, A., et al., "Pregnancy in an Infertile Patient After Transfer to an Embryo Fertilised in Vitro," BRITISH MEDICAL JOURNAL, Vol. 286, pp. 1351-1352 (April 23, 1983).	
		CHEN, X., et al., "Rearranged Mitochondrial Genomes Are Present in Human Oocytes," AM. J. HUM. GENET., Vol. 57, pp. 239-247 (1995).	
		TROUNSON, A.O., et al., "Effect of Delayed Insemination on In-Vitro Fertilization, Culture and Transfer of Human Embryos," J. REPROD. FERT., Vol. 64, pp. 285-294 (1982).	
		PLACHOT, M., et al., "Chromosome Analysis of Human Oocytes and Embryos: Does Delayed Fertilization Increase Chromosome Imbalance?," HUMAN REPROD., Vol. 3 (1), pp. 125-127 (1988).	
		MENG, L., et al., "Rhesus Monkeys Produced by Nuclear Transfer," BIOLOGY OF REPRODUCTION, Vol. 57, pp. 454-459 (1997).	
		LAVOIR, M.C., et al., "Transcription and Translation in Bovine Nuclear Transfer Embryos," BIOLOGY OF REPRODUCTION, Vol. 57, pp. 204-213 (1997).	
		"Special Issue: Abstracts from Second International Symposium on Preimplantation Genetics," JOURNAL OF ASSISTED REPRODUCTION AND GENETICS, Vol. 14 (8), pp. 472-473 (Sept. 1997).	
		TANAKA, M., et al., "Mitochondrial Genotype Associated With Longevity," THE LANCET, Vol. 351, pp. 185-186 (January 17, 1998).	
		JANSEN, Robert P.S., et al., "The Bottleneck: Mitochondrial Imperatives in Oogenesis and Ovarian Follicular Fate," MOLECULAR AND CELLULAR ENDOCRINOLOGY, Vol. 145, pp. 81-88 (1998).	

Examiner Signature	Date Considered
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Sheet 3

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Application Number 09/913,996

Filing Date August 22, 2001

First Named Inventor Robert JANSEN, et al

Art Unit

Examiner Name

Attorney Docket Number GH-005

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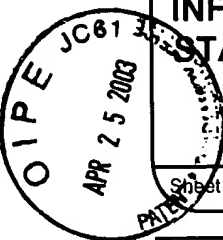
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		PALERMO, G., et al., "Pregnancies After Intracytoplasmic Injection of Single Spermatozoon Into an Oocyte," THE LANCET, Vol. 340, pp. 17-18 (July 4, 1992).	
		COHEN, J., et al., "Ooplasmic Transfer in Mature Human Oocytes," MOLECULAR HUMAN REPRODUCTION, Vol. 4 (3), pp. 269-280 (1998).	
		Van BLERKOM, J., "Microtubule Mediation of Cytoplasmic and Nuclear Maturation During the Early Stages of Resumed Meiosis in Cultured Mouse Oocytes," PROC. NAT'L. ACAD. SCI., USA, Vol. 88, pp. 5031-5035 (June 1991).	
		Van BLERKOM, J., "Maturation at High Frequency of Germinal-Vesicle-Stage Mouse Oocytes After Cryopreservation: Alterations in Cytoplasmic, Nuclear, Nucleolar and Chromosomal Structure..", HUMAN REPRODUCTION, Vol. 4 (8), pp. 883-898 (1989).	
		PIKO, L., et al., "Number of Mitochondria and Some Properties of Mitochondrial DNA in the Mouse Egg," DEVELOPMENTAL BIOLOGY, Vol. 49, pp. 1-10 (1976).	
		KEEFE, David L., et al., "Mitochondrial Deoxyribonucleic Acid Deletions in Oocytes and Reproductive Aging in Women," FERTILITY AND STERILITY, Vol. 64 (3), pp. 577-583 (September 1995).	
		MULLER-HOCKER, J., et al., "Morphological-Cytochemical and Molecular Genetic Analyses of Mitochondria in Isolated Human Oocytes in the Reproductive Age," MOL. HUMAN REPRODUCTION, pp. 951-958 (October 21, 1996).	
		SCHON, Eric A., "Mitochondria," MITOCHONDRIAL DNA IN HUMAN PATHOLOGY, pp. 1-7, RAVEN PRESS, LTD., NEW YORK (1993).	
		ZEVIANA, M., et al., "Searching for Genes Affecting the Structural Integrity of the Mitochondrial Genome," BIOCHIMICA ET BIOPHYSICA ACTA., Vol. 1271, pp. 153-158 (1995).	
		KLOPSTOCK, T., et al., "3.1-kb Deletion of Mitochondrial DNA in a Patient With Kearns-Sayre Syndrome," ACTA. NEUROPATHOL., Vol. 90, pp. 126-129 (1995).	

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Application Number

09/913,996

Filing Date

August 22, 2001

First Named Inventor

Robert JANSEN, et al

Art Unit

Examiner Name

Attorney Docket Number

GH-005

**OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS**

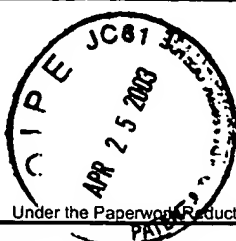
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		VAZQUEZ-ACEVEDO, M., et al., "Characterization of a 5025 Base Pair Mitochondrial DNA Deletion in a Kearns-Sayre Syndrome," BIOCHIMICA ET BIOPHYSICA ACTA, Vol. 1271, pp. 363-368 (1995).	
		KLEINLE, S., et al., "Detection and Characterization of Mitochondrial DNA Rearrangements in Pearson and Kearns-Sayre Syndromes by Long PCR," HUM. GENET., Vol. 100, pp. 643-650 (1997).	
		CORRAL-DEBRINSKI, M., et al., "Association of Mitochondrial DNA Damage With Aging and Coronary Atherosclerotic Heart Disease," MUTATION RESEARCH, Vol. 275, pp. 169-180 (1992).	
		HAYAKAWA, M., et al., "Age-Associated Oxygen Damage and Mutations in Mitochondrial DNA in Human Hearts," BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMM., Vol. 189 (2), pp. 979-985 (1992).	
		MUNSCHER, C., et al., "Human Aging is Associated With Various Point Mutations in tRNA Genes of Mitochondrial DNA," BIOL. CHEM. HOPPE-SEYLER, Vol. 374, pp. 1099-1104 (December 1993).	
		MELOV, S., et al., "Marked Increase in the Number and Variety of Mitochondrial DNA Rearrangements in Aging Human Skeletal Muscle," NUCLEIC ACIDS RESEARCH, Vol. 23 (20), pp. 4122-4126 (1995).	
		CORTOPASSI, G., et al., "Detection of a Specific Mitochondrial DNA Deletion in Tissues of Older Humans," NUCLEIC ACIDS RESEARCH, Vol. 18 (23), pp. 6927-6933 (1990).	
		SUIGYAMA, S., et al., "Quantitative Analysis of Age-Associated Accumulation of Mitochondrial DNA...", BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMM., Vol. 180 (2), pp. 894-899 (October 31, 1991).	
		SOONG, N., et al., "Mosaicism for a Specific Somatic Mitochondrial DNA Mutation in Adult Human Brain," NATURE GENETICS, Vol. 2, pp. 318-323 (December, 1992).	
		CORRAL-DEBRINSKI, M., et al., "Mitochondrial DNA Deletions in Human Brain: Regional Variability and Increase With Advanced Age," NATURE GENETICS, Vol. 2, pp. 324-329 (December 1992).	

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		KATO, T., et al., "Deletion of Leukocyte Mitochondrial DNA in Bipolar Disorder," JOURNAL OF AFFECTIVE DISORDERS, Vol. 37, pp. 67-73 (1996).	
		BARREAU, E., et al., "Accumulation of Mitochondrial DNA Deletions in Human Retina During Aging," INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE, Vol. 37 (2), pp. 384-391 (February 1996).	
		KITAGAWA, T., et al., "Rapid Accumulation of Deleted Mitochondrial Deoxyribonucleic Acid in Post Menopausal Ovaries," BIOLOGY OF REPRODUCTION, Vol. 49, pp. 730-736 (1993).	
		PALLOTTI, F., et al., "Evidence That Specific mtDNA Point Mutations May Not Accumulate In Skeletal Muscle During Normal Human Aging," AM. J. HUM. GENET., Vol. 59, pp. 591-602 (1996).	
		FRECKMANN, M., et al., "Mitochondrial Electron Transport Chain Defect Presenting as Hypoglycemia," THE JOURNAL OF PEDIATRICS, Vol. 130 (3), pp. 431-436 (March 1997).	
		EDRIS, W., et al., "Detection and Quantitation by Competitive PCR of an Age-Associated Increase in a 4.8-kb Deletion...", MUTATION RESEARCH, vol. 316, pp. 69-78 (1994).	
		VAN BLERKOM, J., et al., "Mitochondrial Reorganization During Resumption of Arrested Meiosis in the Mouse Oocyte," AMERICAN JOURNAL OF ANATOMY, Vol. 171, pp. 335-355 (1984).	
		STEUERWALD, N., et al., "Analysis of Gene Expression in Single Oocytes and Embryos...", MOLECULAR HUMAN REPRODUCTION, Vol. 5 (11), pp. 1034-1039 (1999).	
		WAKAYAMA, T., et al., "Fertilisability and Developmental Ability of Mouse Oocytes With Reduced Amounts of Cytoplasm," ZYGOTE 6, pp. 341-346 (1998)	
		COHEN, J., et al., "Birth of Infant After Transfer of Anucleate Donor Oocyte Cytoplasm Into Recipient Eggs," THE LANCET, pp. 961-962, Vol. 350 (July 19, 1997).	

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